

WHAT IS CLAIMED IS

1           1.     A negotiated wireless peripheral comprising:  
2                 a short-range wireless transceiver operative to support a position-dependent  
3     ecommerce session with a mobile unit;  
4                 a negotiation module coupled to the short-range wireless transceiver, the  
5     negotiation module operative to engage in a handshaking sequence with the mobile unit  
6     to establish the position-dependent ecommerce session;  
7                 a service module coupled to the short-range wireless transceiver and operative to  
8     supply at least one peripheral augmentation service to the mobile unit; and  
9                 a contract module operative to negotiate a billing arrangement with the mobile  
10    unit for use of the at least one peripheral augmentation service.

1           2.     The negotiated wireless peripheral of Claim 1, wherein:  
2                 the contract module communicates with a server-side management entity to access  
3     a pre-negotiated billing arrangement with the mobile unit.

1           3.     The negotiated wireless peripheral of Claim 1, wherein:  
2                 the contract module performs a digital debit and/or digital credit card transaction  
3     with the mobile unit.

1           4.     The negotiated wireless peripheral of Claim 1, wherein:  
2                 the peripheral augmentation service provides the mobile unit with desktop sized  
3     display surface, a desktop-style keyboard, and a pointing device.

1           5.     The negotiated wireless peripheral of Claim 1, wherein:  
2                 the peripheral augmentation service comprises a power connector used to power  
3     and/or charge a mobile unit.

1           6.     The negotiated wireless peripheral of Claim 1, wherein:  
2                 the position-dependent ecommerce session involves at least one security  
3     association and at least one corresponding encryption algorithm.

1           7.     For use in a negotiated wireless peripheral device, a method comprising:  
2           communicating with a mobile unit to initiate the establishment of a position-  
3           dependent ecommerce session therewith;  
4           engaging in a handshaking sequence with the mobile unit to establish the position-  
5           dependent ecommerce session;  
6           negotiating a billing arrangement with the mobile unit;  
7           supplying at least one peripheral augmentation service to the mobile unit; and  
8           billing for the peripheral augmentation service supplied to the mobile unit.

1           8.     The method of Claim 7, wherein the position-dependent ecommerce  
2           session is established via a wireless local area network (wLAN) connection.

1           9.     The method of Claim 7, wherein the position-dependent ecommerce  
2           session is established via a wireless wide area network (wWAN) and is initiated by  
3           having the mobile unit send a location parameter to a negotiated wireless peripheral  
4           management server.

1           10.    The method of Claim 9, wherein location parameter comprises a set of  
2           global positioning system (GPS) coordinates.

1           11.    The method of Claim 9, wherein location parameter comprises a set of  
2           local positioning system (LPS) coordinates.

1           12.    The method of Claim 9, wherein location parameter comprises an  
2           identification code visibly located on the negotiated wireless peripheral device.

1           13.    The method of Claim 7, wherein the position-dependent ecommerce  
2           session is established via a wireless wide area network (wWAN) and is initiated by  
3           having the mobile unit send a URI or URL to a negotiated wireless peripheral  
4           management server, whereby the URI or URL is visibly located on the negotiated  
5           wireless peripheral device.

1           14.    The method of Claim 7, wherein peripheral-extension service further  
2 comprises:  
3           passing a stub object to the mobile unit; and  
4           invoking an input and/or output method in a remote object that receives a message  
5 involving a marshaled method invocations and/or marshaled parameters from the stub  
6 object.

1           15.    The method of Claim 7, wherein peripheral-extension service further  
2 comprises:  
3           passing a stub object to the mobile unit; and  
4           invoking a WAN communication method in a remote object that receives a  
5 message involving a marshaled method invocations and/or marshaled parameters from  
6 the stub object.

1           16.    A mobile unit comprising:  
2           a processor that executes software to provide a smart phone operating system and  
3 a set of one or more application programs, the operating system and application programs  
4 making use of an area-restricted user interface;  
5           a first transceiver that communicates in accordance with a wireless wide area  
6 network (wWAN) protocol;  
7           a second transceiver that communicates in accordance with a short-range wireless  
8 protocol;  
9           a negotiation module coupled to the second transceiver, the negotiation module  
10 operative to engage in a handshaking sequence with a negotiated wireless peripheral to  
11 establish a position-dependent ecommerce session therewith;  
12           a contract module coupled to the negotiation module and operative to negotiate a  
13 billing arrangement with the negotiated wireless peripheral to contract with the negotiated  
14 wireless peripheral to use one or more peripheral services; and  
15           a reconfiguration module operative to update a configuration definition in the  
16 mobile unit to reconfigure the peripheral definitions of the mobile unit to include the at  
17 least one peripheral augmentation service provided by the negotiated wireless peripheral.

1 17. For use in a mobile unit that communicates with a network server and  
2 augments its peripheral capabilities by contracting with a negotiated wireless peripheral, a  
3 method comprising:

4 providing an operating system that supports an area-constrained user interface;  
5 communicating with a network server in accordance with a wireless wide area  
6 network (wWAN) protocol;

7 communicating with a negotiated wireless peripheral;  
8 engaging in a handshaking sequence with the negotiated wireless peripheral to  
9 establish a position-dependent ecommerce session therewith;

10 negotiating a billing arrangement with the negotiated wireless peripheral to  
11 contract with the negotiated wireless peripheral to supply at least one peripheral  
12 augmentation service;

13 updating a configuration definition in the mobile unit to reconfigure at least one  
14 peripheral definition to reflect the at least one peripheral augmentation service.

1 18. The method of Claim 17, wherein communicating with the negotiated  
2 wireless peripheral is performed using a wLAN connection.

1 19. The method of Claim 17, wherein a non-area constrained user interface is  
2 presented to the user using the at least one extension peripheral.

1 20. The method of Claim 17, further comprising:  
2 communicating with an application server via a WAN to perform client-side  
3 processing of a client-server application program;

4 sending a peripheral-reconfiguration message to the application server; and

5 redirecting at least one peripheral input-output stream to the at least one  
6 contracted peripheral supplied by the negotiated wireless peripheral.

1           21.     The method of Claim 20, further comprising:  
2           instantiating a stub object that communicates with a remote object, the remote  
3 object being instantiated by and residing within the negotiated wireless peripheral;  
4           invoking a method over the stub object, the method corresponding to an input  
5 and/or an output operation;  
6           passing a message from the stub object to the remote object;  
7           whereby the remote object performs the input and/or the output operation in  
8 response to the message in order to provide input and/or output devices extension  
9 services to the mobile unit.

1           22.     For use with an application service provider (ASP) server, a method of  
2 supplying application services to remote users, the method comprising:  
3           performing server-side transactions with remote clients via a communications  
4 network and performing server computing functions in a client-server computing system;  
5           delivering content customized according to an area-constrained user interface that  
6 allows an area-constrained client-side entity to interact with at least one client-server  
7 program;  
8           maintaining a parameter defining a mobile device configuration declaration;  
9           transmitting a first set of content to the mobile unit, the first set of content being  
10 customized to the area-constrained user interface;  
11           receiving a mobile device peripheral-set reconfiguration message; and  
12           transmitting a second set of content to the mobile unit, the second set of content  
13 being customized for a non-area constrained user interface.

1           23.     The method of Claim 22, further comprising the step of:  
2           maintaining a server system involving application programs and user file systems.

1           24.     The method of Claim 22, further comprising the step of:  
2           providing a portal to a computer system that maintains application programs and  
3 user file systems.

1           25.     The method of Claim 22, wherein the device reconfiguration message is  
2 sent by the mobile unit after the mobile unit has contracted for peripheral augmentation  
3 services that are supplied by a negotiated wireless peripheral.

1           26.     For use with an application services provider (ASP) server, a global-  
2 desktop business method, comprising:  
3           maintaining a customer base of users of global desktop application services;  
4           supplying an application services provider server, the server supplying application  
5 program services to include a desktop user interface;  
6           providing a representation of the desktop user interface customized for use with  
7 an area-constrained user interface associated with a specific type of client mobile unit;  
8           receiving a message indicative of the existence a temporarily augmented set of  
9 peripheral devices available to the client mobile unit due to the mobile unit contracting  
10 with a negotiated wireless peripheral device;  
11          providing a non-area constrained user interface representative of the desktop user  
12 interface; and  
13          charging the global desktop services.

14           27.     A method of selling peripheral augmentation services, the peripheral  
15 augmentation services accessible to users of a system which provides application services  
16 to allow users to electronically execute computer application programs, the method  
17 comprising:  
18

19          installing a plurality of geographically dispersed negotiated wireless peripheral  
20 devices;  
21          establishing a network session between a management server and the negotiated  
22 wireless peripheral device;  
23          receiving a request session from a mobile unit to establish a position-dependent  
24 ecommerce;  
25          negotiating a billing arrangement with the mobile unit to provide at least one  
26 peripheral augmentation service to the mobile unit;  
27          providing the at least one peripheral augmentation service to the mobile unit; and  
28          billing the mobile unit for the peripheral augmentation service.

1           28.    The method of Claim 27 further comprising:  
2           maintaining a server-accessible list indicative of a set of one or more peripheral  
3 augmentation services provided by at least a subset of the negotiated wireless peripheral  
4 devices in the installed plurality of devices.

1           29.    The method of Claim 27 wherein the receiving is performed using a short-  
2 range wireless transceiver in the wireless negotiated peripheral.

1           30.    The method of Claim 27 wherein the receiving is performed via a WAN  
2 along with supplementary information indicative of the specific wireless negotiated  
3 peripheral device with which the position-dependent ecommerce session is to be  
4 established.

1           31.    A method of selling federated-negotiated wireless peripheral services with  
2 the assistance of associates, the federated-negotiated wireless peripheral services  
3 accessible to users of a system which provides application services to allow users to  
4 electronically execute computer application programs, the method comprising:

5           enrolling a plurality of associates using an on-line registration system, whereby  
6 each the associate indicates at least one peripheral augmentation service provided by at  
7 least one negotiated wireless peripheral device supplied by the associate;

8           establishing a network session between a management server and at least one  
9 negotiated wireless peripheral device that was provided by an associate;

10          receiving a request to establish a position-dependent ecommerce session from a  
11 mobile unit with the at least one negotiated wireless peripheral device;

12          negotiating a billing arrangement with the mobile unit to provide at least one  
13 peripheral service to the mobile unit;

14          providing the at least one peripheral augmentation service to the mobile unit;

15          billing the mobile unit for the peripheral augmentation service; and

16          compensating the associate for providing the negotiated wireless peripheral device  
17 to the installed base of devices.

1           32.    The method of Claim 31 wherein the compensating is paid based on a  
2 periodic fee schedule for providing the negotiated wireless peripheral device to the  
3 installed base of devices.

1           33.     The method of Claim 31 wherein the compensating is paid based on a per-  
2     usage fee for providing the peripheral augmentation service to the mobile unit.

1           34.     A method of selling electronic tickets, comprising:

2     at a merchant web site:

3                 (i) offering a ticket for admission to an event for sale via a merchant web  
4     site;

5                 (ii) receiving via a communications network an order for the ticket from  
6     an on-line customer; and

7                 (iii) initiating an encryption algorithm that results in an encryption-  
8     protected ticket, transmitting the encryption-protected ticket to the on-line  
9     customer via the communications network; and

10     at an event admission station comprising a wireless negotiated peripheral device:

11                 (i) engaging in a handshaking sequence with a mobile unit to establish a  
12     position-dependent ecommerce session;

13                 (ii) receiving via the position-dependent ecommerce session the  
14     encryption-protected ticket;

15                 (iii) generating an acknowledgement signal indicating the encryption-  
16     protected ticket is valid; and

17                 (iv) granting admission to the event upon validation of the encryption-  
18     protected ticket.

1           35.     The method of Claim 34, wherein the encryption-protected ticket uses an  
2     encryption-based authentication algorithm that incorporates a digital signature associated  
3     with the on-line customer, and the digital signature is generated using a public/private key  
4     cryptography algorithm.

1           36.     The method of Claim 35, wherein the encryption-protected ticket uses an  
2     encryption-based authentication algorithm that incorporates a digital signature associated  
3     with a certificate authority.



1           37.     In a system comprising a negotiated wireless peripheral, an application  
2     service provider server, and a mobile unit that includes a short range wireless air  
3     interface, a wireless wide area network air interface, and an area-constrained user  
4     interface, a method comprising:  
5           negotiating a position-dependent ecommerce session between the mobile unit and  
6     the negotiated wireless peripheral;  
7           negotiating the use of a set of peripheral services to be provided to the mobile unit  
8     by the negotiated wireless peripheral;  
9           establishing or reestablishing a communication session between the mobile unit  
10    and the application service provider server, whereby content in the session is customized  
11    to operate with a peripheral set augmented by the negotiated wireless peripheral;  
12           transmitting a set of data from the application service provider that causes the  
13    appearance of a desktop user interface to be displayed on a non-area constrained  
14    peripheral set augmented by the negotiated wireless peripheral.

1           38.     The method of claim 37, wherein the negotiated wireless peripheral  
2     includes a keyboard, a mouse, and a display monitor, and a client-server application  
3     session is supported using a wireless wide area network connection supplied by the  
4     mobile unit.

1           39.     The method of claim 37, wherein the negotiated wireless peripheral  
2     includes a keyboard, a mouse, and a display monitor, and a client-server application  
3     session is reestablished using a wireline wide area network connection supplied by the  
4     negotiated wireless peripheral.

1           40.    A business method, comprising:  
2           supplying one or more negotiated wireless peripherals as a set of geographically  
3 dispersed access points;  
4           negotiating a price for supplying to a mobile unit one or more peripheral  
5 augmentation services from a negotiated wireless peripheral;  
6           supplying the one or more peripheral augmentation services to the mobile unit;  
7 and  
8           charging to the user associated with the mobile unit for the peripheral  
9 augmentation services.

1           42.    The method of claim 41, wherein the negotiated wireless peripheral  
2 includes a keyboard, a mouse, and a display monitor, and a client-server application  
3 session is supported using a wireless wide area network connection supplied by the  
4 mobile unit.

1           43.    The method of claim 40, wherein the negotiated wireless peripheral  
2 includes a keyboard, a mouse, and a display monitor, and a client-server application  
3 session is reestablished using a wireline wide area network connection supplied by the  
4 negotiated wireless peripheral.

1           44.    In a mobile unit, method of least-cost packet routing, comprising:  
2           receiving a first mobile IP agent advertisement from an agent associated with a  
3 wWAN carrier;  
4           registering with the agent to have traffic sent to a mobile IP address associated  
5 with the mobile unit routed to the mobile unit via the agent;  
6           receiving a second mobile IP agent advertisement from an agent associated with a  
7 wLAN access point;  
8           comparing a monetary cost for transmitting and/or receiving data traffic from the  
9 wWAN carrier and the wLAN access point; and  
10          if the cost associated with the wLAN access point is lower, sending a mobile IP  
11 compliant message to cause the network attachment point associated with the mobile  
12 unit's mobile IP address to be reassociated with the wLAN access point.